

Docket No. F-7889

Ser. No. 10/616,324

**REMARKS**

Claims 1 and 2 remain pending in this application. Claims 1 and 2 are rejected. Claims 1 and 2 are amended to incorporate minor change which place the claims into more succinct English and do not raise new issues. Hence, entry of said amendments is respectfully submitted as warranted. Claims 3-20 are previously cancelled.

**CLAIM REJECTIONS UNDER 35 U.S.C. § 102(b)**

Claims 1 and 2 are again rejected under 35 U.S.C. § 102(c) as being anticipated by the Tokura reference. Applicant herein respectfully traverses these rejections. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added).

In view of the rejections based on the Tokura reference being maintained, it appears that the prior explanation of the deficiency of the Tokura reference was not clearly set forth and the Examiner has misunderstood applicant's arguments since the Tokura reference clearly does not disclose the claimed invention. The invention of claims 1 and 2 will first be explained and then the inadequacies of the Tokura reference brought to light.

Docket No. F-7889

Ser. No. 10/616,324

## A. OVERVIEW EXPLANATION OF CLAIMED INVENTION

An image forming system according to claim 1 comprises a computer, a first image forming apparatus (monochromatic), and a second image forming apparatus (color). The operation of these elements is as follows:

- (1) The computer, when it receives job data, divides the job data into color and monochromatic data and allocates the divided data to the first and second image forming apparatuses.
- (2) At this time, firstly, the computer transmits the monochromatic job to the first image forming apparatus and when the monochromatic job is completed, i.e., it has been printed, *a job-completion signal* from the first image forming apparatus is sent to the computer.
- (3) The computer is further configured to receive and the second image forming apparatus is configured to send a *job-process-continuation signal*. The *job-process-continuation signal* is a signal indicating that a monochromatic-printed recording sheet is set on a post-processing tray of the second image forming apparatus. In other words, an operator will take the monochromatic print job, i.e., black and white printed pages, that is already completed and set it on the post-processing tray of the second image forming apparatus.
- (4) In response to receiving the *job-process-continuation signal*, the computer then transmits a color job to the second image forming apparatus.

Docket No. F-7889

Ser. No. 10/616,324

- (5) The second image forming apparatus checks the page number included in the color job and allows a monochromatic printed recording sheet (e.g. black and white sheet) object and a color print object (e.g. color printed sheet) to be discharged serially onto the same *recording-material discharge tray* while serializing their page numbers in a sequential order.

The operation (5) is effected by the following recitation of claim 1:

(2) a recording-material mixing configuration for checking said page numbers of said color print job data transmitted from said computer, and switching respective operations of said recording-material feed means and said post-processing means to effect mixing and discharge of color pages of said second recording material and monochrome pages of said first recording materials together on said recording-material discharge tray while serializing the page numbers thereof in sequential order.

The invention of claim 2 is similar to the invention defined in claim 1. The job is divided into color and monochromatic data according to the invention defined in claim 1. On the other hand, according to the invention defined in claim 2, the job data is divided in accordance with a given dividing rule and allocated to image forming apparatuses. Claim 2 does not recite the specific first and second image forming apparatuses. However, claim 2 also provides a post-processing device which is controlled to allow pages printed by different printing apparatuses to be output arranged serially on a common output tray, i.e., "mixed together on said recording-

Docket No. F-7889

Ser. No. 10/616,324

material discharge tray while serializing the page numbers thereof in sequential order." This is reflected in the following claim 2 language:

(2) a recording-material mixing configuration for checking said page numbers of said job data transmitted from said computer, and switching said respective operations of said recording-material feed means and said post-processing device to effect mixing and discharge of said second recording materials with images formed by said another image forming apparatus and said first recording materials with images formed by said image formation means together on said recording-material discharge tray while serializing the page numbers thereof in sequential order.

#### B-1. DETAILED EXPLANATION OF SIGNAL TRANSFER FEATURE

According to the invention as defined in claim 1, the processing of 1-4 described above are performed. In other words, the computer, when it receives job data, divides the job data into color and monochromatic data and allocates the divided data to the first and second image forming apparatuses. At this time, firstly, the computer transmits the monochromatic job to the first image forming apparatus to complete the job, receives a **job-completion signal** from the first image forming apparatus, receives a **job-process-continuation signal** from the second image forming apparatus, and transmits a color job to the second image forming apparatus. The job-process continuation signal function is set forth in claim 1 as **the computer** including the following:

Docket No. F-7889

Ser. No. 10/616,324

(d) a data-transmitting/receiving configuration for transmitting said monochromatic print job data to said first image forming apparatus via said network, and *transmitting said color print job data to said second image forming apparatus via said network in response to reception of a job-process-continuation signal from said second image forming apparatus* after receiving a job-completion signal from said first image forming apparatus[.]

The above configuration of the **computer** is to be considered as *a whole in conjunction* with the following **second image forming apparatus** structure:

(d) job-process-continuation-signal input means for entering said job-process-continuation signal there through, wherein said job-process-continuation-signal input means *outputs said job-process-continuation signal to said computer only after said first recording materials with monochrome images formed by said first image forming apparatus are set on said post-processing tray of said post-processing device.*

The above portions of claim 1 enable the black and white images to be loaded into the post-processing tray so they may later be output in sequentially order with the color images printed b the color printer to which the post-processor is attached. In other words, the color printing is not done until the black and white printed sheets are loaded into the post processing tray so they may be output in sequence with the color pages *as the color pages are printed.*

## B-2. SIGNAL TRANSFER FEATURE ABSENT IN TOKURA

In the Office Action, the Examiner cites operation disclosed in the Tokura reference based on Fig. 5 and description of S501-S508 in Tokura, as disclosing the

Docket No. F-7889

Ser. No. 10/616,324

above described claimed signal transfer operation. In the portion of the cited reference, it is only disclosed that the print server 100 discriminates contents of color output information, transmits monochromatic data to a printer for a monochromatic printing and color data to a printer for a color printing in accordance with the discrimination result. This is basically summarized in the following paragraphs of the Tokura reference:

[0044] If the page is determined to be a color page, an ejection command is added to the print data and the resultant data is transmitted to the image processing apparatus 110 from which the color output information has been obtained and which can perform the color process (S507). The processing routine is finished.

[0045] If the page is determined to be a B/W page in step S506, an ejection command is added to the print data and the resultant data is transmitted to the image processing apparatus 110 which can perform the B/W process (S508). The processing routine is finished.

Nowhere in the above description is there a discussion of the server 100 receiving a job-process continuation which is sent in response to printed matter from another printer being loaded in the post-processing tray of a post-processor.

In contrast, according to the present invention a job-completion signal from the first image forming apparatus and a job-process-continuation signal from the second image forming apparatus are used for performing a control of transmitting a color job to the second image forming apparatus after confirming completion of a job in the first image forming apparatus in accordance with a job-completion signal from the first image forming apparatus and confirming setting of a recording sheet, which

Docket No. F-7889

Ser. No. 10/616,324

is printed in the first image forming apparatus to the second image forming apparatus in accordance with a job-process-continuation signal from the second image forming apparatus. It is important to bear in mind that in the claimed invention a color job is transmitted to the second image forming apparatus after:

- (1) completion of a job in the first image forming apparatus is confirmed based on a job-completion signal from the first image forming apparatus; and
- (2) setting of a recording sheet which is printed in the first image forming apparatus is confirmed in accordance with the job-process-continuation signal from the second image forming apparatus.

Regarding (1) above, the Examiner asserts that corresponding part (b) of the first image forming apparatus, i.e. "processing of detecting completion of a job and then outputting the job-completion signal to the computer" is disclosed in Fig. 10 merely as the print server. However, while it is known that printers send job completion signals, the claims of the present invention directed to the whole invention wherein two signals discussed above are used. As the apparatus of the Tokura reference is not devoted to controlling a second printing apparatus in response to a first printing apparatus, the two signals are not used in the invention disclosed in the Tokura reference, and not disclosed in Fig. 10 or a related cited by the Examiner.

Docket No. F-7889

Ser. No. 10/616,324

The Examiner also cites claim 5 and column 2 of page 5 of the Tokura reference a providing such a teaching of the claimed two signals. However, nowhere in such disclosure are two such signals and operation confirmations found because, as described above, the invention disclosed in the Tokura reference does not use the two signals ("job-completion signal from the first image forming apparatus" and "job-process-continuation signal from the second image forming apparatus"), and a timing control for transmitting the color data in accordance with the two signals is not performed at all. Therefore, part (d) of the computer is not disclosed in the portions of the Tokura reference applied by the Examiner.

In summary, there is no transmission of color data in response to a signal acknowledging that sheets from a first image forming apparatus are received in the second image forming apparatus.. Hence, it is respectfully requested that Examiner carefully review portions (d) of the computer and (d) of the image forming apparatus, in combination with each other as discussed above because, with all due respect to the Examiner, such overall structure is not taught by the Tokura reference.

#### C-1. DETAILED EXPLANATION OF OUTPUT MIXING FEATURE.

Furthermore, the present invention include the structure necessary for mixing together the sheets printed by the first and second image forming apparatuses, such mixing being nowhere effected in the Tokura reference. According to the invention defined in claim 1, after a job-process-continuation signal is inputted, a



Docket No. F-7889

Ser. No. 10/616,324

sheet-conveyance control of switching between conveyance of a color-printed recording sheet by the sheet recording-material feed means placed on each tray and conveyance of a monochromatic-printed recording sheet by said post-processing means in the second image forming apparatus is effected by the "recording-material mixing configuration." This is reflected in part (2) of the image-formation control means of both claims 1 and 2.

#### C-2. OUTPUT MIXING FEATURE ABSENT IN TOKURA.

The Examiner refers to Figs. 4 and 7 and a description regarding same as teaching disclose the claimed processing. It is respectfully submitted that citation of the Tokura as teaching the claimed invention can only be based on a misunderstanding of either the claimed invention or the Tokura reference. According to the invention disclosed in the Tokura reference, a **monochromatic-printed** recording sheet and a color-printed recording sheet are discharged in *separate image forming apparatuses* respectively.

In the Response to Arguments, the Examiner states:

In Tokura's Background of the Invention, He discloses a prior art print system that prints color pages and black and white pages that are outputted in parallel. Tokura goes on to say that:

"there is a problem such that the user has to do work for rearranging a page order.

Docket No. F-7889

Ser. No. 10/616,324

[0008] Since the user also has to do work for rearranging sheets printed by each of the color printer and the B/W printer in the page order, it is troublesome. [0009] Particularly, in case of printing a large quantity of sheets, a time which is required for the manual work of the user is also considerably long. Therefore, it is demanded to save such a time with respect to the above problem."

It will first be noted that the Examiner is referring to the background of the disclosure, which unless specifically incorporated into the disclosed invention of the disclosure is improper for an anticipation rejection. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). Hence, piecing together features of background art with the invention of disclosure is not proper in forming an anticipation rejection.

Nevertheless, the background pointed out by the Examiner merely recognizes that manually assembling color and black and white sheets is time consuming. In response to this need, Tokura provides a system enabling a user to serialize page numbers of monochromatic pages and color pages in a sequential order, a control of discharging a monochromatic pages to different bins or shift positions in the monochromatic printer at points in the sequence when the color pages are to be inserted is effected by the monochromatic printer.

The Examiner further states:

Docket No. F-7889

Ser. No. 10/616,324

FIGS. 7A to 7C and 8A to 8C are diagrams for explaining distribution of the image data by the print server 100 shown in FIG. 1 and image output processing states by the paper ejector 130 connected to each printer 120 and correspond to a case where one printer 120 is the color printer and its paper ejector 130 is the sorter and a case where the other printer 120 is the B/W printer and its paper ejector 130 is the finisher, respectively.

Thus, the B/W pages and color pages which were distributed and outputted are sorted and ejected on an output page unit basis of the succeeding page numbers, respectively as described in [0065].

The above statement by the Examiner acknowledges that pages are placed in two different location paper ejector 130 of the color printer 120 which is a sorter and the paper ejector 130 of the B/W printer which is a finisher. Contrary to the requirements of the pending claims, *the black and white pages are not output to the same tray as the color pages in the Tokura reference*. This deficiency of the Tokura reference should be readily evident from Figs. 7A-7C. Fig. 7A shows the proper order for pages of a document, it depicts the *document itself* and NOT the output at any given tray of the system. Fig. 7B represents the output at the bins (3 total) of *the color printer/sorter*. Fig. 7C represents the output in *a first tray of the black and white printer* wherein pages are shifted to indicate insertion points for the color pages which are in the bins shown in Fig. 7B. The color pages and black and white pages **are not output mixed together on a common tray.**

It is respectfully submitted as apparent in light of the above discussion that the Tokura reference cannot disclose the claimed feature of the present invention of:

Docket No. F-7889

Ser. No. 10/616,324

switching respective operations of said recording-material feed means and said post-processing means to effect mixing and discharge of color pages of said second recording material and monochrome pages of said first recording materials together on said recording-material discharge tray while serializing the page numbers thereof in sequential order.

According to the "sheet conveyance control" of the present invention, a **color-printed recording sheet** and a **monochromatic-printed recording sheet** are to be placed in *the same image forming apparatus*. In claim 1, the second image forming apparatus includes the post-processing device, *and* element (d) of the second image-forming device includes the following feature:

said job-process-continuation-signal input means is adapted to allow said job-process-continuation signal to be output to said computer *only after said first recording materials with monochrome images formed by said first image forming apparatus are set on said post-processing tray of said post-processing device*[.]

Hence, the completion of a job, i.e., the printing of the color images, is only effected after the black and white sheets (first recording materials with monochrome images) are transferred to the post-processing tray of the second image forming apparatus. This is because the data-transmitting/receiving configuration (d) of the computer transmits the color print job data "in response to reception of a job-process-continuation signal from said second image forming apparatus." Claim 2 recites similar subject matter in relation to the at least one image forming apparatus (corresponding to the second image forming apparatus of claim 1) receiving second

Docket No. F-7889

Ser. No. 10/616,324

recording materials with images formed by another one of said image forming apparatuses (corresponding to the first image forming apparatus of claim 1) which are "set on said post-processing tray of said post-processing device."

In claim 1, once the black and white image sheets are placed in the post-processing section of the second image forming apparatus, the job-process continuation signal enables printing of the colored sheets to commence. During this printing, the recording-material mixing configuration of the image formation control means switches between:

(1) the recording material feed means which feeds the color pages;

and

(2) the post-processing means which effects discharge of the black

and white pages which have been placed the post-processing section;

to effecting the *mixing and discharge* of the color and black and white sheets "together on said recording-material discharge tray while serializing the page numbers thereof in sequential order."

#### D. CONCLUSION.

It is respectfully submitted that the Tokura reference fails to teach (1) the above described signal conveyance and (2) the controlled mixing of color and black and white pages together onto a tray. According to the processing (1) and (2) performed in the second image forming apparatus, color/monochromatic-printed

Docket No. F-7889

Ser. No. 10/616,324

recording sheets are serialized in a sequential order and discharged to the discharging tray of one image forming apparatus. However, according to the invention disclosed in the cited reference, color-printed recording sheets and monochromatic-printed recording sheets are discharged to discharging trays of separate image forming apparatuses. Accordingly, a control which is completely different from the processing of items (1) and (2) performed by the second image forming apparatus and the computer.

In view of the above, it is respectfully submitted that claims 1 and 2 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 1 and 2 and their allowance are respectfully requested.

**NO FEE DUE**

No fee is believed due. If there is any fee due the USPTO is hereby authorized to charge such fee to Deposit Account No. 10-1250.

Docket No. F-7889

Ser. No. 10/616,324

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,  
JORDAN AND HAMBURG LLP

By *Frank J. Jordan* *Reg 35 341*  
Frank J. Jordan  
Reg. No. 20,456  
Attorney for Applicants

and,

By *Herbert F. Ruschmann*  
Herbert F. Ruschmann  
Reg. No. 35,341  
Attorney for Applicants

Jordan and Hamburg LLP  
122 East 42nd Street  
New York, New York 10168  
(212) 986-2340